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NASA Procedural Requirements

NPR 7900.3A
Effective Date: April 08, 1999
Expiration Date: December
31, 2006

COMPLIANCE IS MANDATORY

[Printable Format \(PDF\)](#)

Subject: Aircraft Operations Management w/Interim Revision to Chapter 3

Responsible Office: Aircraft Management Division

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CHAPTER 4: Airworthiness and Safety/Flight Readiness Review Policy

4.1. Purpose

This chapter establishes guidelines to ensure the airworthiness and appropriate maintenance of NASA aircraft. It also establishes guidelines for safety and flight readiness reviews performed in conjunction with the acceptance or modification of aircraft.

4.2. Airworthiness Guidelines

4.2.1. NASA aircraft will be operated in an airworthy condition as certified by a formal review board and under the authority of either a NASA Airworthiness Certificate or an FAA Certificate of Airworthiness. Mission Management Aircraft will be operated in compliance with FAR Part 91 and maintained and inspected in accordance with FAR Parts 21, 39, 43, and 91 by technicians certified under FAR Part 65. These requirements may be satisfied by existing Center processes that satisfy risk management requirements.

4.2.2. Airworthiness and safety/flight readiness reviews will be conducted for all significant aircraft modifications and to establish procedures to conduct flight operations. The purpose of these reviews shall be to minimize risk to persons and property and to enhance the likelihood of mission and program success. Formal review requirements will be commensurate with the significance of the mission/project and the risk involved.

4.3. Airworthiness Responsibilities

4.3.1. The Enterprise Associate Administrators will establish, review, and approve programmatic requirements.

4.3.2. The Associate Administrator, Office of Safety and Mission Assurance will formulate NASA safety policy and provide independent oversight of NASA aviation safety and safety guidelines.

4.3.3. The Center Directors will establish airworthiness and safety/flight readiness review procedures to manage the risks associated with flight programs, to ensure safe aircraft operations, and to ensure that flight objectives satisfy programmatic requirements. The Center Directors will ensure that these procedures are incorporated into the contracts of those who operate and maintain NASA-controlled aircraft.

4.3.4. The Aircraft Management Team (AMT) will work with the IAOP and its subpanels to establish Agencywide airworthiness review and standard operating procedures for mission management aircraft.

4.4. Airworthiness and Safety/Flight Readiness Reviews

4.4.1. Center Directors will establish procedures to ensure that airworthiness and safety reviews are conducted for aircraft operations or missions, as applicable, as well as procedures to ensure the conduct and documentation of formal airworthiness and safety/flight readiness reviews of significant aircraft modifications and flight programs. Uniformity of procedures is neither appropriate nor required in view of the diverse nature of aircraft operations within NASA. The following fundamental elements and functions are an integral part of NASA aircraft airworthiness and

safety/flight readiness review programs. Those that are appropriate should be included in policies and procedures that cover flight or flight-test operations.

4.4.2 The purpose of these reviews is to ensure that risks have been adequately managed to enhance the likelihood of mission and program success, to ensure adequate justification for all missions or operations, and to minimize the risks to persons or property.

4.4.3 The detail addressed by the flight readiness reviews will be dependent on the risk assessment associated with the aircraft, the mission, or the project requirements, and should be organized accordingly.

4.4.4. Flight programs will be reviewed as early in the development cycle as possible and will identify the need and schedule for additional safety related resources, procedures, or reviews.

4.4.5. Procedures will be established to ensure that after modifications are completed, configuration changes are properly documented to ensure that accurate aircraft inventories are recorded in order to comply with property management and weight-and-balance documentation requirements.

4.5. Airworthiness and Maintenance Programs

NASA aircraft will be maintained in accordance with an established and documented airworthiness program, using standards of quality in workmanship, materials, and support equipment that will ensure safety of flight.

4.5.1. All NASA aircraft, aircraft supporting NASA, and aircraft using NASA flight crews will be maintained under an approved airworthiness program using standards of quality in materials, workmanship, and supporting ground equipment that comply with the FAA-approved OEM standards, DoD technical standards, or NASA standards, as required. NASA aircraft maintenance and quality assurance inspection programs should address, as a minimum, the following activities:

4.5.1.1. Calendar, depot, periodic, phase, preflight and postflight inspections, and provisions for inspection and certification procedures of specific maintenance actions.

4.5.1.2. Determination of the serviceability, authenticity, traceability, and airworthiness of parts, components, accessories, and assemblies by subjecting them to inspections, tests, or operational checks.

4.5.1.3. Configuration control process to ensure compliance with applicable airworthiness, service and safety bulletins, or other pertinent directives, such as those from FAA, DoD, and OEM. The process should allow for documentation of alternate procedures or inspections if they were substituted.

4.5.1.4. Program for trend analysis and investigation of recurring discrepancies, high-failure rate components, and high-usage materials.

4.5.1.5. Documentation consisting of aircraft logs and records, accessory change records, weight and balance records, and aircraft property accountability records, as well as that documentation required by NPG 4100.x, NASA Materials Inventory Management Manual.

4.6. Quality Assurance

4.6.1. NASA Quality Systems shall conform to the International Organization for Standardization (ISO) 9000. A comprehensive aircraft quality assurance program will be established at each NASA Center that is responsible for the maintenance of mission management aircraft.

4.6.2. The Chief of Aircraft Operations is responsible for ensuring that Quality Assurance Inspectors and other personnel are trained, qualified, and assigned to implement a comprehensive quality assurance program appropriate for Center aircraft operations.

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